ULTRACOUSTIC ACX450/ACX900/ACX1800

GB

User's Manual

Version 1.1 June 2006

www.behringer.com

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JUST LISTEN.

IMPORTANT SAFETY PRECAUTIONS

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CAUTION: To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside; refer servicing to qualified personnel.

WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure—voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

DETAILED SAFETY INSTRUCTIONS:

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15) CAUTION - These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions unless you are qualified to do so.

FOREWORD

Dear Customer,

Welcome to the team of BEHRINGER users, and thank you very much for expressing your confidence in us by purchasing the BEHRINGER ULTRACOUSTIC.

Writing this foreword for you gives me great pleasure, because it represents the culmination of many months of hard work delivered by our engineering team to achieve a very ambitious goal: to present you with an outstanding acoustic instrument amplifier that is at the forefront of what is technically possible and that offers you a vast variety of sound shaping options. The task of designing our new ULTRACOUSTICs certainly meant a great deal of responsibility, which we assumed by focusing on you, the discerning user and musician. Meeting your expectations also meant a lot o6f work and night shifts. But it was fun, too. Developing a product usually brings a lot of people together, and what a great feeling it is when all who participated in such a project can be proud of what they've achieved.

It is our philosophy to share our enjoyment with you, because you are the most important member of the BEHRINGER team. With your highly competent suggestions for new products you've made a significant contribution to shaping our company and making it successful. In return, we guarantee you uncompromising quality as well as excellent technical and audio properties at an extremely reasonable price. All of this will enable you to give free rein to your creativity without being hampered by budget constraints.

We are often asked how we manage to produce such high-quality devices at such unbelievably low prices. The answer is quite simple: it's you, our customers! Many satisfied customers mean large sales volumes enabling us to get better purchasing terms for components, etc. Isn't it only fair to pass this benefit on to you? Because we know that your success is our success too!

I would like to thank all of you who have made the ULTRACOUSTIC Series possible. You have all made your own personal contributions, from the developers to the many other employees at this company, and to you, the BEHRINGER user.

My friends, it's been worth the effort!

Thank you very much,

Uli Behringer

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1. INTRODUCTION

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Thank you for choosing the ULTRACOUSTIC amplifier. You have purchased a modern 2-channel amplifier that guarantees excellent sound quality for various applications yet is easy to operate. The ULTRACOUSTIC comes with a wide range of features such as two integrated, 24-bit multi-effect processors or the FBQ Feedback Detection system which help you to fine-tune your sound. Due to the many possibilities of connecting external effects units and playback feeds, the ULTRACOUSTIC is a real all-rounder leaving nothing to be desired.

☞ **Please read this manual to familiarize yourself with the control elements of the unit and its functions. After you have carefully read this manual, keep it for future reference.**

1.1 Before you get started

1.1.1 Shipment

The ULTRACOUSTIC was carefully packed at the assembly plant to ensure secure transport. If the cardboard box is damaged, please inspect the ULTRACOUSTIC equipment immediately for physical damage.

☞ **Damaged equipment should NEVER be sent directly to us. Please inform the dealer from whom you acquired it immediately as well as the transportation company from which you took delivery. Otherwise, all claims for replacement/repair may be rendered invalid.**

☞ **If the unit needs to be shipped, please always use the original packaging to avoid damage.**

☞ **Never let unsupervised children play with the ULTRACOUSTIC or with its packaging.**

☞ **Please dispose of all packaging materials in an environmentally-friendly fashion.**

1.1.2 Initial operation

Please make sure that your ULTRACOUSTIC is provided with sufficient ventilation, and never place it on other amplifiers or in the vicinity of a heater to avoid the risk of overheating.

☞ **Before plugging your ULTRACOUSTIC into a power socket, please make sure you have selected the correct voltage:**

The fuse retainer near the power cord connector has three triangular markings. Two of these triangles point in opposite directions. Your ULTRACOUSTIC is set up for the voltage indicated near these markings, and can be altered by turning the fuse mount by 180 degrees. **ATTENTION: This does not apply to export models built for 120 V, for example!**

☞ **If you use your ULTRACOUSTIC unit with a different voltage, you must change the fuses accordingly. The correct value of the fuses needed can be found in the section "SPECIFICATIONS".**

☞ **Faulty fuses must be replaced with fuses of appropriate rating, without exception! The correct value of the fuses needed can be found in the section "SPECIFICATIONS".**

Power is delivered via the cable that was delivered with the ULTRACOUSTIC. All mandatory safety precautions have been adhered to.

☞ **Please make sure that all of your equipment is grounded at all times. For your own protection, you should never tamper with the grounding of the cable or the unit itself. The unit shall always be connected to a mains socket outlet with a protective earthing connection.**

1.1.3 Online registration

Please, do remember to register your new BEHRINGER equipment right after your purchase by visiting www.behringer.com and kindly read the terms and conditions of our warranty carefully.

Should your BEHRINGER product malfunction, our goal is to have it repaired as quickly as possible. To arrange for warranty service, please contact the retailer from whom the equipment was purchased. Should your BEHRINGER dealer not be located in your vicinity, you may directly contact one of our subsidiaries. Corresponding contact information is included in the original equipment packaging (Global Contact Information/European Contact Information). Should your country not be listed, please contact the distributor nearest you. A list of distributors can be found in the support area of our website (www.behringer.com).

Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently.

Thank you for your cooperation!

2. CONTROL ELEMENTS AND CONNECTIONS

2.1 Front panel

[1] The ¼" jack connector labeled *INSTR*(UMENT) is the input of the instrument channel of your ULTRACOUSTIC to connect your acoustic guitar. Use a commercially available mono jack cable. We recommend using a cable with impact sound insulation so as to avoid unpleasant incidences during a rehearsal or concert.

[2] The *PHASE* switch (not included in ACX450) reverses the instrument channel phase by 180°. Use this function to eliminate feedback problems or phase errors of dual pickup systems.

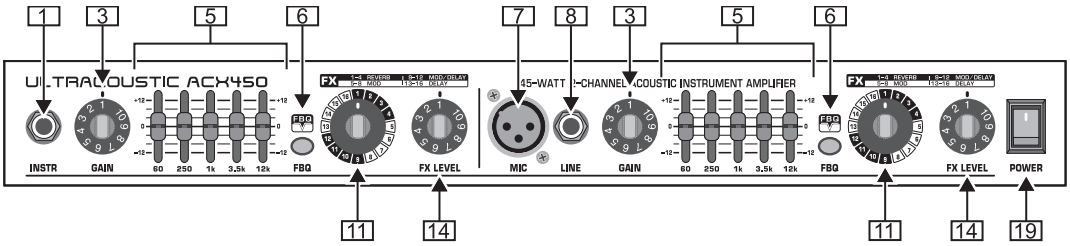
[3] The *GAIN* controller is used to determine the volume of the respective channel.

[4] With the *TUNER* switch (not included in ACX450), you can mute the channel. There is a permanent signal at the TUNER [22] connector at the rear of the unit. You have the option to connect an external tuner to this jack (e.g. BTR2000, TU100).

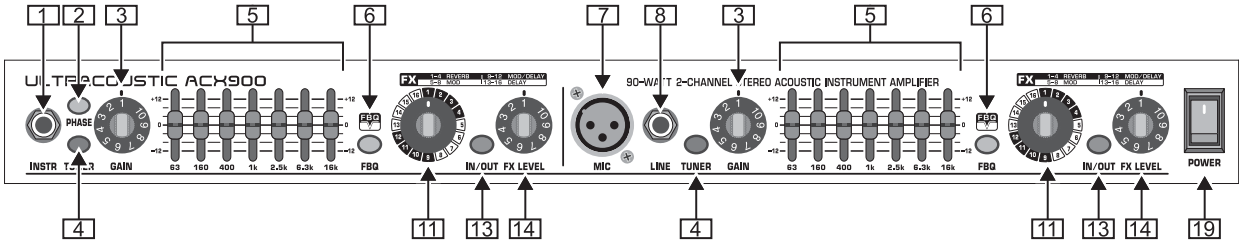
When the input signal overdrives the instrument channel, the *CLIP* LED located in the TUNER switch is on (only in ACX1800). Reduce the input gain with the GAIN controller until the CLIP LED is off. Occasional flashing of the CLIP LED caused by signal peaks is harmless though, as the instrument channel has sufficient headroom.

[5] This is the *FBQ EQUALIZER*. Each sliding controller controls a specific frequency range. In position 0, the frequency is not adjusted. To boost a frequency range, move the respective sliding controller up. To lower its volume, move the sliding controller down. The maximum boosting or damping range is 12 dB.

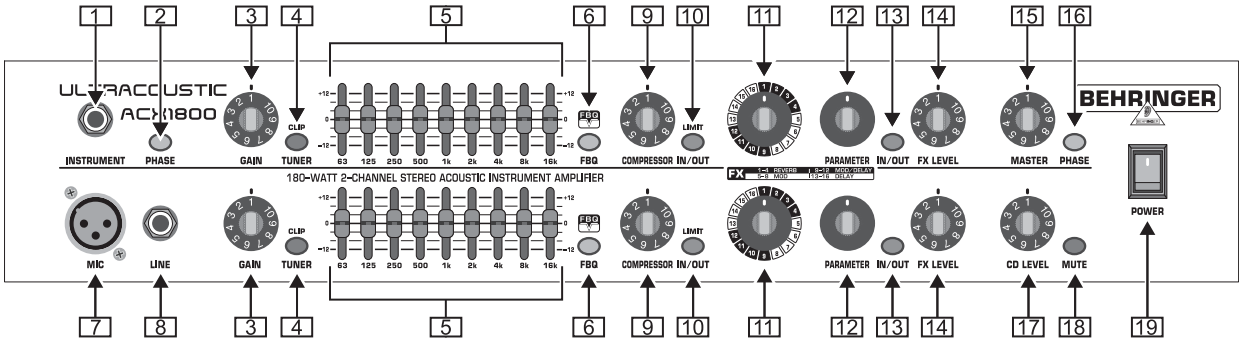
[6] Press the *FBQ* switch to activate the FBQ function. While the FBQ is switched off, the controller LEDs are lit with the same brightness. When the FBQ is on and you play your instrument, the LED's brightness varies, depending on the energy content of the associated frequency range. This visual feature supports you in adjusting the sound and eliminating feedback. The equalizer is always activated, irrespective of whether the FBQ function is on.


1 3 5 6 7 8 3 5 6
ULTRACOUSTIC ACX450
45-WATT 2-CHANNEL ACOUSTIC INSTRUMENT AMPLIFIER
INSTR GAIN 60 250 1k 3.5k 12k FBQ FX LEVEL MIC LINE GAIN 60 250 1k 3.5k 12k FBQ FX LEVEL POWER
11 14 11 14 19

ACX450


1 2 3 5 6 7 8 3 5 6
ULTRACOUSTIC ACX900
90-WATT 2-CHANNEL STEREO ACOUSTIC INSTRUMENT AMPLIFIER
PHASE INSTR GAIN 63 160 400 1k 2.5k 6.3k 16k FBQ IN/OUT FX LEVEL MIC LINE TUNER GAIN 63 160 400 1k 2.5k 6.3k 16k FBQ IN/OUT FX LEVEL POWER
4 11 13 14 4 11 13 14 19

ACX900


1 2 3 4 5 6 9 10 11 12 13 14 15 16
ULTRACOUSTIC ACX1800
BEHRINGER
INSTRUMENT PHASE GAIN CLIP TUNER 63 125 250 500 1k 2k 4k 8k 16k FBQ COMPRESSOR IN/OUT LIMIT PARAMETER IN/OUT FX LEVEL MASTER PHASE
180-WATT 2-CHANNEL STEREO ACOUSTIC INSTRUMENT AMPLIFIER
POWER
MIC LINE GAIN CLIP TUNER 63 125 250 500 1k 2k 4k 8k 16k FBQ COMPRESSOR IN/OUT LIMIT PARAMETER IN/OUT FX LEVEL CD LEVEL MUTE
7 8 3 4 5 6 9 10 11 12 13 14 17 18 19

ACX1800

Fig. 2.1: The front panel control elements

7 The *MIC* jack is the balanced XLR microphone input of the microphone/line channel.

8 The balanced *LINE* jack (1/4") of the microphone/line channel can be used for line-level signals, e.g. from keyboards, drum computers, etc.

9 The *COMPRESSOR* controller is used to adjust the intensity of the compression (only in ACX1800, see chapter 4.3).

10 The compressor is switched on/off with the *IN/OUT* switch (only in ACX1800).

11 With the *FX SELECT* controller, you can select one of 16 effect programs. For a detailed description of the available effects, see table 4.1 in chapter 4.2.

12 With the *PARAMETER* controller (only in ACX1800) you can edit certain effect parameters. For details on the parameters that are adjustable for each effect, see table 4.1.

13 The *IN/OUT* switch (not included in ACX450) allows you to activate the selected effect. If an effect has been activated, the LED in the switch is on. Alternatively, you can switch the selected effect on and off with the foot switch.

14 The *FX LEVEL* controller is used to adjust the level (share) of the selected effect.

15 With the *MASTER* controller, you can adjust the overall volume of the ACX1800.

16 The *PHASE* switch reverses the phase of the mix signal by 180° (only in ACX1800). Use this switch to eliminate problems with feedback.

17 The ULTRACOUSTIC is equipped with a CD input at the rear panel. Use the *CD LEVEL* controller in the master section (only in ACX1800) to adjust the volume of the signal connected to the CD jack. In the ACX900 and ACX450, this controller is located on the rear panel (see fig. 2.2).

18 The CD jack of the ACX1800 can be muted with the *MUTE* switch.

19 Use the *POWER* switch to switch on the ULTRACOUSTIC. Before connecting the ULTRACOUSTIC to the power mains, ensure that the POWER switch is in OFF position. To disconnect the unit from the mains network, pull the plug from the socket. When switching on the ULTRACOUSTIC, ensure that the mains plug is easily accessible.

☞ **Please note: The POWER switch does not fully disconnect the unit from the mains power cord plug or extention cord. To disconnect the unit from the main power source, pull out the main cord plug or appliance coupler. When installing the product, ensure the plug or appliance coupler is readily operable. Unplug the power cord when the unit is not used for a prolonged period of time.**

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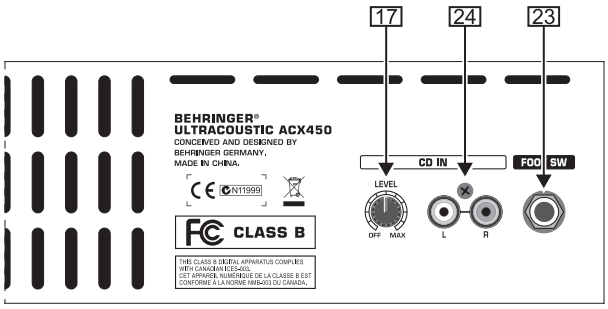
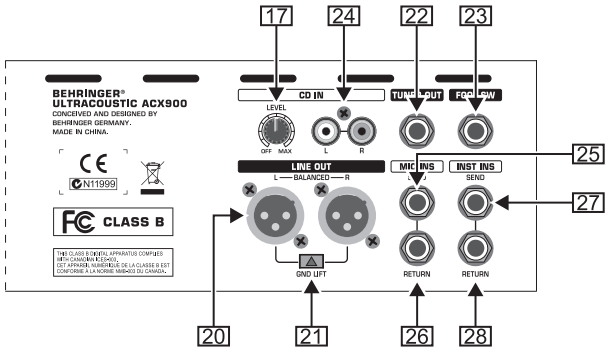
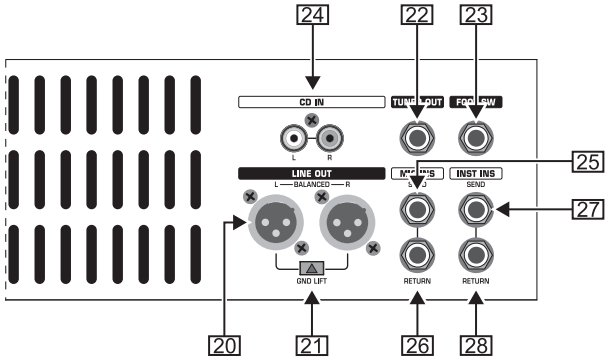
2.2 Rear panel



ACX450



ACX900



ACX1800

Fig. 2.2: Rear panel connectors

20 Use the balanced *LINE* outputs (XLR connections) to connect your ULTRACOUSTIC to the inputs of a mixing desk (only in ACX1800 and ACX900).

21 With the *GND LIFT* (ground lift) switch you can disconnect the ground connection between the amplifier and the mixing desk (switch pressed). This is done to eliminate buzz or ground loop hum.

22 You also have the option to take up the audio signal from the instrument channel at the *TUNER* output and to feed it to the tuner. There is a continuous signal at this jack.

23 Connect the supplied double foot switch to the *FOOT SW*(ITCH) jack. The foot switch enables you to switch the effects of both channels on and off (corresponds to the function of the *IN/OUT* switch 13).

24 The *CD IN* input (RCA) allows for the connection of an external stereo source. You can for example play your favourite tune while being accompanied with music from a CD, MD or a drum machine.

25 +26 *MIC INSERT*: The microphone channel is equipped with a serial loop connection for external effects units. To do this, connect the *SEND* jack 25 with the input of your effects unit. Connect the output of the external effects unit to the *RETURN* jack 26 of the ULTRACOUSTIC.

27 +28 *INST(RUMENT) INSERT*: The instrument channel is also equipped with a serial loop connection for external effects units. 27 is the respective *SEND* connector (output) and 28 is the respective *RETURN* connector (input).

☞ **The INSERT SEND connector can also be used as parallel outputs, e.g. to individually feed the signal of one channel. As long as the RETURN connector is not used, the internal signal flow is not interrupted.**

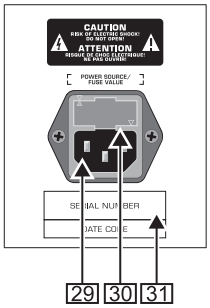


Fig. 2.3: Standard IEC power receptacle, fuse holder and serial number (rear panel)

29 Power is supplied via an *IEC* connector. The matching cable is provided with the unit.

30 *FUSE RETAINER/VOLTAGE SELECTOR*: Please make sure that the voltage indicated by the voltage selector matches the local voltage before you connect the unit to the main power supply. Always replace blown fuses with fuses of the same type and rating. Some units feature a fuse retainer in which a selection between 230 V and 120 V is possible. Please be aware: When using your unit outside of Europe with 120 V, a fuse with a higher rating is required.

31 *SERIAL NUMBER.*

3. APPLICATIONS

3.1 Connecting options for the ACX450

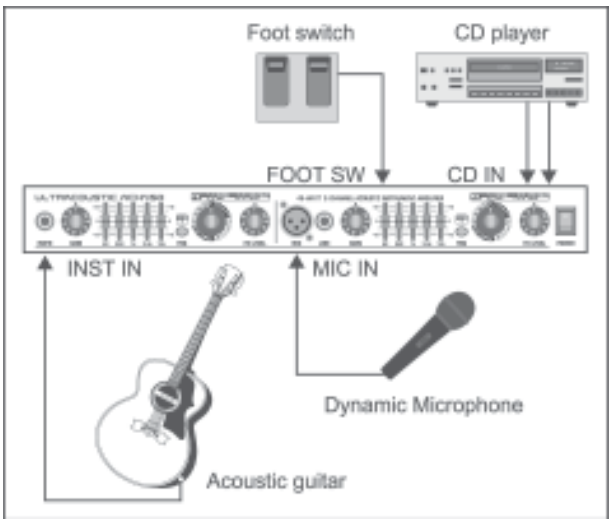


Fig. 3.1: Cabling options of the ACX450

The above cabling is suitable for sessions in the rehearsal room or for practicing at home. Connect your guitar to the instrument input jack of channel 1. If desired, connect another instrument or a dynamic microphone to channel 2.

Connect the supplied FS112 foot switch to the foot switch input at the rear panel. With the foot switch, you can switch the effects units of both channels on and off, which is particularly useful during live performances.

To play along with a playback, connect a CD player to the CD input. Of course, a MD player or a computer can be used as playback device as well.

3.2 Extended connecting options (ACX900 and ACX1800)

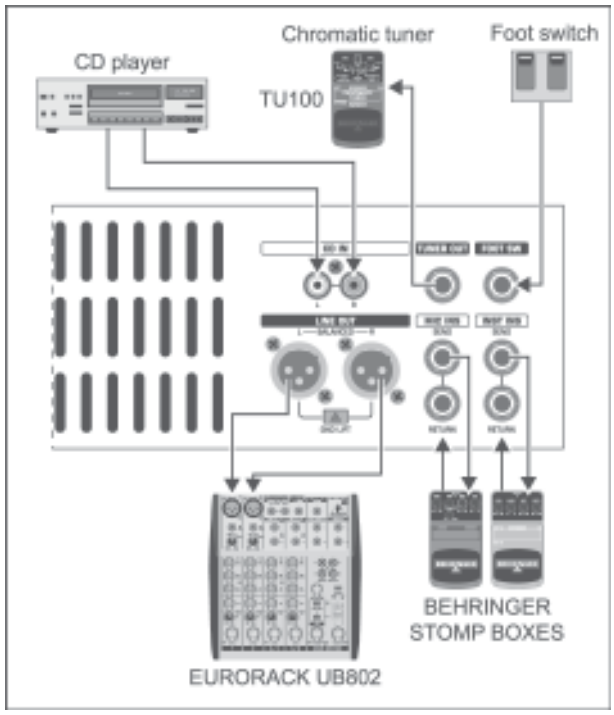


Fig. 3.2: Extended connecting options (ACX900 and ACX1800)

Models ACX900 and ACX1800 offer a wide range of additional connecting options. The above figure shows only one of many possible installations:

The instruments, microphones, the foot switch as well as the CD player are connected as shown in figure 3.1. The tuner is connected to the tuner output where there is a constant instrument signal. If you wish to integrate external effects units, you can do this separately for each of the two channels. Connect the input of the effects unit to the INSERT SEND of one of the respective channels, and connect the effect output at the unit to the INSERT RETURN jack of the same channel. Instead of the two stage effects units shown here connected in series in the signal path, you can establish a parallel effects loop, e.g. by means of a 19" studio effects unit. In this case, connect the input of the effects unit to the MIC INSERT SEND or the INSTRUMENT INSERT SEND output, and feed the stereo output signal of the effects unit through the CD INPUT jacks. You can then use the CD LEVEL controller to mix the effects signal and your guitar signal. With this option, please note that the effects unit only returns the effects signal (100%Wet) and not the original signal.

Musicians who wish to play their instrument through a PA system during a live session normally need a DI box. A DI box prepares the signal for transfer through long cable lines, so that a higher output level for the mixing desk can be achieved. You will be delighted to know that your ULTRACOUSTIC comes with a built-in DI box! Connect the balanced LINE outputs directly to the mixing desk input or to the multi-core feeding to the mixing desk. Use a microphone cable (two-core shielded cable with XLR connectors).

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4. SOUND PROCESSING

The ULTRACOUSTIC offers many options for sound processing. The ACX1800 includes, for example, an FBQ equalizer, a multi-effects unit and a compressor. The various processing options are explained in this chapter.

4.1 FBQ equalizer

A graphic equalizer with FBQ spectrum analyzer is available for sound adjustment and correction. If the sliding controllers are in neutral position (0), the signal is not modified.

▲ To boost the frequency range, move the respective sliding controller up.

▲ To dampen the range, move the sliding controller down.

▲ Press the FBQ switch [6] to activate the FBQ display.

FBQ function: Each controller is equipped with a LED indicating the level of the associated frequency range of the controller by means of its brightness. This assists you in identifying the controller that must be used to edit the sound. If the sound is for example too dull or too droning, one of the LEDs is probably very bright, indicating the sliding controller that should be moved down to reduce the bass level. On the other hand, you can quickly identify frequency ranges whose level is too low (LED barely lit) to increase it.

☞ **To emphasize certain frequency ranges, it might not be necessary to raise these, but to lower the levels of the other frequencies by moving the respective sliding controllers down. This approach prevents excessively high internal signal levels, thus retaining valuable dynamic reserves ("headroom").**

4.2 Digital effects processor

One of the key features of your ULTRACOUSTIC are the two built-in multi-effects processors that operate independently of each other in both channels. Each effects module offers a total of 16 different programs that are grouped in four categories.

▲ To switch effects on or off, press the IN/OUT switch [13] at the ULTRACOUSTIC or at the foot switch.

▲ Turn the FX SELECT controller [11] to select a program. The effects are described in the following overview:

FX	FX program	Function	Parameter (ACX1800)
REVERB	1	Chamber	Decay
	2	Room	Decay
	3	Hall	Decay
	4	Concert	Decay
MOD	5	Chorus	Depth
	6	Flanger	Depth
	7	Phaser	Speed
	8	Tremolo	Speed
MOD/DLY	9	Chorus / Delay 400 ms	Delay Level
	10	Flanger / Delay 400 ms	Delay Level
	11	Chorus / Delay 300 ms	Delay Level
	12	Flanger / Delay 300 ms	Delay Level
DELAY	13	Delay 80 ms	Feedback
	14	Delay 300 ms	Feedback
	15	Delay 400 ms	Feedback
	16	Delay 500 ms	Feedback

Table 4.1: Effects programs

▲ Use the *FX LEVEL* controller [14] to make the effect audible.

▲ Edit the effect using the PARAMETER controller [12] (only in ACX1800).

1-4 REVERB

The reverb presets are effects that imitate the reverberation of various large rooms. Use the PARAMETER controller to adjust the reverberation time (decay).

1 **CHAMBER** simulates the typical characteristics of a studio. This effect is useful in cases where you need unobtrusive reverb to liven up the signal.

2 **ROOM**: Reverberation typical for rooms of medium size, with clearly audible reverb from walls.

3 **HALL:** Simulation of a lively large hall with considerable echo.

4 **CONCERT** simulates the prolonged reverb in a large concert hall.

5-8 MOD

This group includes four modulation effects that are generated in different ways. For each effect, you can adjust the depth and speed of the modulation.

5 **CHORUS** give guitar signals more depth and width. This is achieved by means of a modulated delay of the input signal.

6 **FLANGER**: Popular guitar effect achieved by constant modulation of the tone pitch.

7 **PHASER**: The phase effect is similar to the flange, but somewhat subtler. It is achieved by superimposing a phase-shifted effects signal on the input signal.

8 **TREMOLO**: Intensive variation of the volume at a preset rate.

9-12 MOD/DELAY

This group includes a number of dual effects where for example a chorus or flanger effect is combined with a delay. In the ACX1800, you can adjust the volume of the delay effect.

9 **CHORUS/DELAY** with a delay of 400 ms.

10 **FLANGER/DELAY** with a long delay (400 ms)

11 **CHORUS/DELAY** with a short delay (300 ms).

12 **FLANGER/DELAY** with a delay of 300 ms.

13-16 DELAY

In this group you find delay effects with different delay times. The "Feedback" parameter determines the number of repeats.

13 Short **DELAY** of 80 milliseconds (ms).

14 Medium **DELAY** of 300 ms.

15 **DELAY** of 400 ms.

16 Long **DELAY** of 500 ms.

4.3 Compressor (only in ACX1800)

The compressor reduces the dynamic range of a signal. Volume peaks are lowered, and low signals are boosted, so that the difference between the loudest and the lowest tone of an instrument or voice is reduced. This results in a more expressive and homogeneous sound, and the sustain of long tones is prolonged.

- ▲ Switch on the compressor (ON switch [10]).
- ▲ Turn the COMPRESSOR controller [9] slowly in clockwise direction to increase the compression intensity.
- ▲ Compare the compressed and the original signal by switching the compression ON and OFF (at the ON switch).

If the input signal to the compressor is high, it operates at its optimum range. If the signal is low, the effect becomes only audible when the compressor controller is set to a very high position. If a compressor is switched on in this position, there is a risk of sudden level changes. If GAIN is set to a high value, the same compressor effect is achievable without having to set the controller to a high value. In this case, the COMPRESSOR controller does not have to be turned to a position near the stop in order to achieve any effect. We recommend that you try this out until you have found the best settings!

5. INSTALLATION

5.1 Audio connections

With the exception of the balanced LINE jack mono input, all inputs and outputs of the BEHRINGER ULTRACOUSTIC are unbalanced mono jack sockets. The LINE OUT connections are designed as balanced XLR outputs. The CD inputs are designed as RCA connectors.

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☞ **Please ensure that only qualified persons install and operate the ULTRACOUSTIC. During installation and operation, persons handling and using the equipment must be sufficiently earthed, as electrostatic discharge might affect the operation of the ULTRACOUSTIC!**

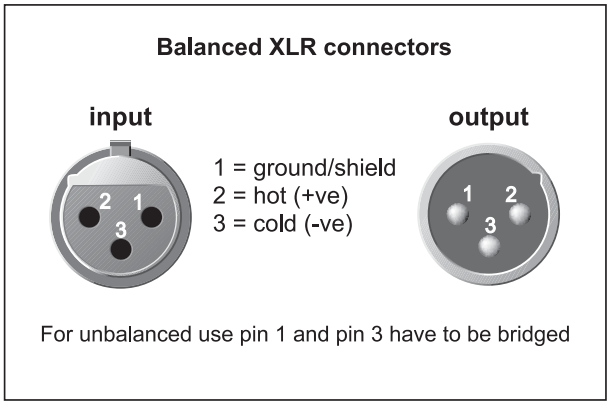

Fig. 5.1: XLR connectors

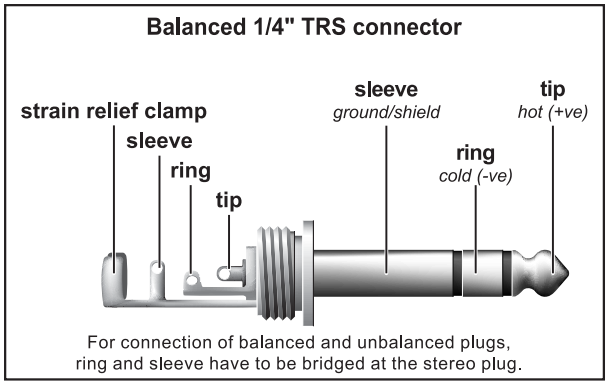

Fig. 5.2: ¼" stereo TRS connector

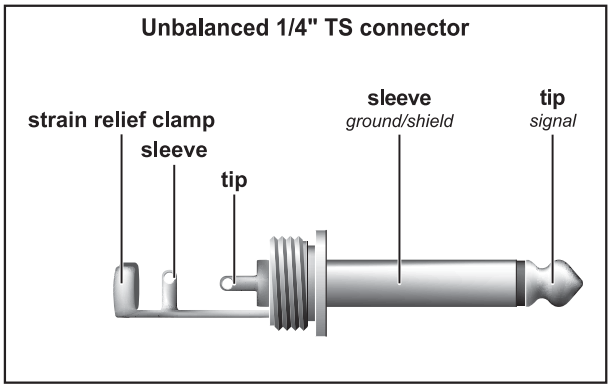

Fig. 5.3: ¼" TS connector

GB

6. SPECIFICATIONS

	ACX450	ACX900	ACX1800
AUDIO INPUTS			
INSTRUMENT IN	¼" TS unbalanced		
Input Impedance	10 MOhm		
MIC IN	XLR balanced		
Input Impedance	4 kOhm		
LINE IN	¼" TRS balanced		
Input Impedance	40 kOhm		
INST INSERT RETURN	-	¼" TS unbalanced	
Input Impedance	-	220 kOhm	
MIC INSERT RETURN	-	¼" TS unbalanced	
Input Impedance	-	220 kOhm	
CD input	RCA		
Input Impedance	>10 kOhm		
AUDIO OUTPUTS			
LINE OUT	-	XLR balanced	
Output Impedance	-	4.3 kOhm	
Max. output level	-	>24 dBu	
INST INSERT SEND	-	¼" TS unbalanced	
Output Impedance	-	100 Ohm	
Max. output level	-	>18 dBu	
MIC INSERT SEND	-	¼" TS unbalanced	
Output Impedance	-	100 Ohm	
Max. output level	-	>18 dBu	
TUNER OUT	-	¼" TS unbalanced	
Output impedance	-	33 kOhm	
Max. output level	-	>6 dBu	
SYSTEM SPECIFICATIONS			
Power rating	1 x 45 W / 4 Ω	2 x 45 W / 2 x 4 Ω	2 x 90 / 2 x 4 Ω
DIGITAL PROCESSING			
Converters	24-bit sigma-delta, 64/128-times oversampling		
Sampling rate	40 kHz		
LOUDSPEAKERS			
Type	1 x 8"	2 x 8"	2 x 8"
Model	BUGERA™ dual cone speakers		
Impedance	4 Ohm	4 Ohm	4 Ohm
Power handling	40 W	60 W	60 W
POWER SUPPLY			
Mains voltage	USA/Canada 120 V~, 60 Hz		
	Europe/U.K./Australia 230 V~, 50 Hz		
	Japan 100 V~, 50 - 60 Hz		
	China/Korea 220 V~, 50 Hz		
	General Export model 120/230 V~, 50 - 60 Hz		
Power consumption	max. 90 W	max. 135 W	max. 265 W
Fuses 100 - 120 V~	**T 2.5 A H** 250 V	**T 3.15 A H** 250 V	**T 6.3 A H** 250 V
Fuses 200 - 240 V~	**T 1.25 A H** 250 V	**T 1.25 A H** 250 V	**T 3.15 A H** 250 V
Mains connection	Standard IEC receptacle		
DIMENSIONS AND WEIGHT			
Dimensions (H x W x D)	413 x455 x 212 mm	423 x 526 x 232 mm	427 x 526 x 242 mm
	16.3 x 17.9 x 8.3"	16.7 x 20.7 x 9.1"	16.8 x 20.7 x 9.5"
Weight	29.1 lbs (13.2 kg)	37 lbs (16.8 kg)	40.6 lbs (18.4 kg)

BEHRINGER is constantly striving to maintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or illustrated.

7. WARRANTY

§ 1 OTHER WARRANTY RIGHTS AND NATIONAL LAW

1. This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.

2. The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law.

§ 2 ONLINE REGISTRATION

Please do remember to register your new BEHRINGER equipment right after your purchase by visiting www.behringer.com (alternatively www.behringer.de) and kindly read the terms and conditions of our warranty carefully. Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently. Thank you for your cooperation!

§ 3 WARRANTY

1. BEHRINGER (BEHRINGER International GmbH including all BEHRINGER subsidiaries listed on the enclosed page, except BEHRINGER Japan) warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year* from the original date of purchase, in accordance with the warranty regulations described below. If the product shows any defects within the specified warranty period that are not excluded from this warranty as described under § 5, BEHRINGER shall, at its discretion, either replace or repair the product using suitable new or reconditioned parts. In the case that other parts are used which constitute an improvement, BEHRINGER may, at its discretion, charge the customer for the additional cost of these parts.

2. If the warranty claim proves to be justified, the product will be returned to the user freight prepaid.

3. Warranty claims other than those indicated above are expressly excluded.

§ 4 RETURN AUTHORIZATION NUMBER

1. To obtain warranty service, the buyer (or his authorized dealer) must call BEHRINGER (see enclosed list) during normal business hours **BEFORE** returning the product. All inquiries must be accompanied by a description of the problem. BEHRINGER will then issue a return authorization number.

2. Subsequently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by BEHRINGER.

3. Shipments without freight prepaid will not be accepted.

§ 5 WARRANTY REGULATIONS

1. Warranty services will be furnished only if the product is accompanied by a copy of the original retail dealer's invoice. Any product deemed eligible for repair or replacement under the terms of this warranty will be repaired or replaced.

2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, BEHRINGER shall not be held responsible for any cost resulting from such a modification/adaptation.

3. Free inspections and maintenance/repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, crossfaders, potentiometers, keys/buttons, tubes, guitar strings, illuminants and similar parts.

4. Damages/defects caused by the following conditions are not covered by this warranty:

- ▲ improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals.
- ▲ connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
- ▲ damages/defects caused by force majeure or any other condition that is beyond the control of BEHRINGER.

5. Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the warranty.

6. If an inspection of the product by BEHRINGER shows that the defect in question is not covered by the warranty, the inspection costs are payable by the customer.

7. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. BEHRINGER will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, BEHRINGER will return the unit C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.

§ 6 WARRANTY TRANSFERABILITY

This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of BEHRINGER.

§ 7 CLAIM FOR DAMAGES

Failure of BEHRINGER to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of BEHRINGER exceed the invoiced value of the product.

* Customers in the European Union please contact BEHRINGER Germany Support for further details.

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Hanns-Martin-Schleyer-Str. 36-38, 47877 Willich-Muenchheide II, Germany.
Tel. +49 2154 9206 0, Fax +49 2154 9206 4903